

WHAT IS CLAIMED:

1. A method for producing hemostasis, tissue closure, and/or vessel closure following a percutaneous medical procedure wherein an access device is introduced to a patient creating a passageway, said method comprising the step of:

- a) inserting a thermal delivery probe into the passageway;
- b) determining a site at which thermal energy should be applied;
- c) emitting sufficient thermal energy to the site in order to raise native tissue temperatures; and
- d) inducing tissue and/or blood coagulation at the site.

2. The method of claim 1, wherein the step of determining the site at which thermal energy should be applied, further comprises ultrasonically interrogating a section of the passageway using pulsed Doppler.

3. The method of claim 2, wherein the passageway was created in order to access a femoral, brachial or peripheral vessel.

4. The method of claim 3, wherein thermal delivery probe has an outer diameter of about 4 – 10 French or larger.

5. The method of claim 4, wherein the emitted thermal energy is ultrasonically applied using a high frequency, high power output ultrasound transducer.

6. The method of claim 2, wherein the emitted thermal energy is ultrasonically applied using a high frequency, high power output ultrasound transducer.

7. The method of claim 5 or 6, wherein the high frequency, high power output ultrasound transducer is located at a distal end of the thermal delivery probe.

8. The method of claim 5, wherein the high frequency, high power output ultrasound transducer is operated at about 6 MHz and output about 2 W/cm².

9. The method of claim 6, wherein the high frequency, high power output ultrasound transducer is operated at about 6 MHz and output about 2 W/cm².

10. A method for producing hemostasis and tissue closure following a percutaneous medical procedure wherein an access device is introduced to a patient creating a passageway, said method comprising the following step:

- a) inserting a ultrasound probe into the passageway;
- b) determining a site at which thermal energy should be applied;
- 15 c) emitting sufficient focused high intensity focused ultrasound energy to the site in order to raise native tissue temperatures; and
- d) inducing tissue and/or blood coagulation at the site.

11. The method of claim 10, wherein the step of determining the site at which thermal energy should be applied further comprises, ultrasonically
20 interrogating a section of the passageway using pulsed Doppler.

12. The method of claim 11, wherein thermal delivery probe has an outer diameter of about 2 – 7 French or larger.

13. The method of claim 12, wherein the emitted thermal energy is ultrasonically applied using a high frequency, high power output ultrasound transducer.

14. The method of claim 10, wherein the emitted thermal energy is ultrasonically applied using a high frequency, high power output ultrasound transducer.

15. The method of claim 13 or 14, wherein the high frequency, high power output ultrasound transducer is located at a distal end of the thermal delivery probe.

16. The method of claim 13, wherein the high frequency, high power output ultrasound transducer is operated at about 6 MHz and output about 2 W/cm².

17. The method of claim 14, wherein the high frequency, high power output ultrasound transducer is operated at about 6 MHz and output about 2 W/cm².

18. A therapeutic medical device adapted to be inserted into a tissue passageway following a percutaneous medical procedure, comprising:

a) an elongated shaft having a proximal section, a distal section, a distal tip and at least one lumen extending longitudinally from the distal tip to a proximal end located in the proximal section;

b) a means for locating and determining a site at which thermal energy should be applied to promote hemostasis; and

c) a means for emitting sufficient thermal energy to the site thereby raising native tissue temperatures thereby inducing tissue and/or blood coagulation.

19. An insertable probe for delivering thermal energy comprising:

5 a) a elongated shaft having a proximal end, a distal end, and at least one lumen extending longitudinally from said proximal end to said distal end; and

b) one or more ultrasound transducers positioned in the elongated shaft; said one or more ultrasound transducers comprising at least one
10 therapeutic ultrasound transducer configured to emit high intensity ultrasound.

20. The insertable probe of claim 19, further comprising a diagnostic ultrasound transducer adapted to ultrasonically interrogate a position in front of the elongated shaft distal end.

21. A method for delivering thermal energy to the tissues, said
15 method comprising:

a) inserting means for heating tissues percutaneously into the body of a patient;

b) determining one or more sites to which thermal energy should be applied;

20 c) emitting sufficient thermal energy to the site in order to raise native tissue temperatures; and

d) inducing a pre-determined therapeutic affect.